

IN THE CLAIMS:

The following is a complete listing of the claims. This listing replaces all earlier versions and listings of the claims.

Claim 1 (currently amended): An image processing method ~~which inputs of~~ inputting a color image signal and ~~corrects~~ correcting the color image signal according to an observation condition, comprising the steps of:

inputting the color image signal;

judging whether or not the ~~input~~ inputted color image signal represents achromatic color; [[and]]

correcting the inputted color image signal according to the observation condition; and

controlling ~~the correction~~ said correcting step according to the ~~judged~~ a result in said judging step, such that the corrected inputted color image signal remains achromatic color when it is judged in said judging step that the inputted color image signal represents achromatic color.

Claim 2 (currently amended): A method according to Claim 1, wherein the color image signal depends on an input-side observation condition and is the color image signal which does not depend on a device and accords to the input-side observation condition.

Claim 3 (currently amended): A method according to Claim 1, wherein the color image signal is represented by an RGB color space according to a standard white point of an input-side observation light.

Claim 4 (currently amended): A method according to Claim 1, wherein, in said correcting step, the inputted color image signal, depending on the input-side observation condition, is converted into a color image signal depending on an output-side observation condition, and

wherein, when the inputted color image signal, depending on the input-side observation, represents [[the]] achromatic color, the corrected inputted color image signal generated by the correction is an achromatic color signal under a standard white point of an output-side observation light.

Claim 5 (currently amended): A method according to Claim 1, further comprising [[the]] a converting step of converting a device-dependent color image signal into a device-independent color image signal on the basis of an input profile,

wherein it is set whether or not the controlling of the correction according to the judged result is to be performed, said controlling step is executed depends on the basis of information in the input profile.

Claim 6 (currently amended): A method according to Claim 1, wherein ~~it is set based~~ whether or not said controlling step is executed depends on a user's manual

instruction ~~whether or not the controlling of the correction according to the judged result is~~  
to be performed.

Claim 7 (currently amended): A method according to Claim 1, further  
comprising converting wherein the corrected inputted color image signal is converted into  
a color image signal depending on an output device, on the basis of an output profile.

Claim 8 (currently amended): An image processing apparatus comprising:

an input means for inputting unit adapted to input a color image  
signal;

~~correction means for correcting the color image signal according to~~  
~~an observation condition;~~

a judgment means for judging unit adapted to judge whether or not  
the ~~input~~ inputted color image signal represents achromatic color; [[and]]

a correction unit adapted to correct the inputted color image signal  
according to an observation condition; and

a control means for controlling unit adapted to control said  
correction unit the correction according to the judged a result by said judgment [[means]]  
unit, such that the corrected inputted color image signal remains achromatic color when it  
is judged by said judgement unit that the inputted color image signal represents achromatic  
color.

Claim 9 (currently amended): A recording medium ~~in which~~ for storing a computer-readable program ~~has been recorded, said program~~ executing an image processing method, said program comprising the steps of:

- code for inputting a color image signal;
- ~~correcting the color image signal according to an observation~~  
~~condition;~~
- code for judging whether or not the ~~input~~ inputted color image signal  
represents achromatic color; [[and]]
- code for correcting the inputted color image signal according to an  
observation condition; and
- code for controlling ~~the correction~~ said code for a correcting step  
according to ~~the judged~~ a result [[in]] by said code for a judging step, such that the  
corrected inputted color image signal remains achromatic color when it is judged by said  
code for a judging step that the inputted color image signal represents achromatic color.

Claim 10 (currently amended): ~~An image processing method which~~  
~~performs a correction process to a color signal according to an observation condition, said~~  
A method according to claim 1, further comprising the steps of:

- obtaining a conversion condition for converting the inputted color  
image signal into a color space, not depending on a color device, on the basis of a standard  
white point of the color image signal; and
- ~~judging whether or not the color signal converted under the~~  
~~conversion condition represents achromatic color; and~~

~~controlling the correction process according to the observation condition, in accordance with the judged result in said judging step~~

converting the inputted color image signal according to the conversion condition,

wherein said judging step includes judging whether or not the converted color image signal represents achromatic color.

Claim 11 (currently amended): A method according to Claim 10, wherein the color space ~~not depending on the color device~~ is defined by red, green and blue three color components.

Claim 12 (currently amended): A method according to Claim ~~[[10]]~~ 1, wherein the correction ~~process~~ according to the observation condition in said correcting step is a correction process which uses a color appearance model and performs non-linear correction.

Claims 13 and 14 (canceled)

Claim 15 (currently amended): An image processing method comprising:  
an input step of inputting a color image signal;  
a first correction ~~process to perform~~ step of performing a non-linear correction on the inputted color image signal according to an observation condition~~[[,]]~~;

a second correction ~~process to perform~~ step of performing a linear correction on the inputted color image signal according to the observation condition $[[,]]$ :  
and

a conversion ~~process to perform~~ step of, when  $[[a]]$  the inputted color image signal ~~representing~~ represents achromatic color is input, conversion converting the inputted color image signal such that an output signal representing achromatic color is output,

wherein, when it is ~~instructed to perform~~ said second correction ~~process~~ step is executed according to the observation condition, it is ~~controlled not to~~ perform said conversion ~~process~~ step is not executed.

Claim 16 (new): An image processing method comprising the steps of:

converting, based on an input profile, a color image signal depending on an input device to a color image signal depending on an input-side observation condition and not depending on the input device;

converting, using a conversion condition according to a standard white point of an input-side observation condition, the color image signal depending on the input-side observation condition and not depending on the input device to a color signal composed of a red component, a green component, and a blue component depending on the input-side observation condition and not depending on the input device;

correcting, using a non-linear model according to the input-side observation condition and an output-side observation condition, the color signal to generate a color signal according to the output-side observation condition;

converting, based on an output profile, the color signal according to the output-side observation condition to a color image signal depending on an output device;

outputting the color image signal depending on the output device;

judging whether or not the color signal represents achromatic color by judging whether or not the red component, the green component, and the blue component, comprising the color signal, are approximately the same,

wherein, when it is judged in said judging step that the color signal represents achromatic color, correcting the color signal according to the output-side observation condition to represent the achromatic color and executing said output profile based converting step.

Claim 17 (new): An image processing method according to Claim 16, wherein, whether or not to execute said correcting step to represent the achromatic color depends on information acquired from the input profile and the output profile.

Claim 18 (new): A recording medium for storing a program executing an image processing method, said program comprising:

code for converting, based on an input profile, a color image signal depending on an input device to a color image signal depending on an input-side observation condition and not depending on the input device;

code for converting, using a conversion condition according to a standard white point of an input-side observation condition, the color image signal

depending on the input-side observation condition and not depending on the input device to a color signal composed of a red component, a green component, and a blue component depending on the input-side observation condition and not depending on the input device;

code for correcting, using a non-linear model according to the input-side observation condition and an output-side observation condition, the color signal to generate a color signal according to the output-side observation condition;

code for converting, based on an output profile, the color signal according to the output-side observation condition to a color image signal depending on an output device;

code for outputting the color image signal depending on the output device;

code for judging whether or not the color signal represents achromatic color by judging whether or not the red component, the green component, and the blue component, comprising the color signal, are approximately the same,

wherein, when it is judged in said code for a judging step that the color signal represents achromatic color, correcting the color signal according to the output-side observation condition to represent the achromatic color and executing said code for an output profile based converting step.